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on one side. If it is placed upward, the respiration of the embryo is hindered. The embryoscope can be turned up at any moment, and kept upright for five minutes at a time without injury to the embryo.

With a little practice, the whole process of arming an egg with the embryoscope may be completed in from six to eight minutes.

The embryoscope is well adapted for purposes of class-demonstration, for investigating the growth of the various parts of the embryo, and the physiological processes during embryonic life, as the action of the heart; movements of the body, etc. It is indispensable to him who would study the effects of external agents upon the embryos of warm-blooded animals; and must be of great service where it is required to determine the precise stage of development before removing the embryo from the egg. It has been found useful in studying the formation of double embryos. Fene-strated eggs have been successfully incubated up to the thirteenth day, and it is probable that under favorable conditions the embryos of such eggs would reach maturity.

On the fifth day, it is still easy to bring the embryos under the window. On the sixth and seventh days, it is more difficult. At this period the change in the position of the embryo, which requires from five to ten minutes, should take place in the incubator.

After the eighth day, the embryo cannot be brought under the window. If it be necessary to determine whether such an egg or an older one still lives, we have only to leave the egg for several hours in the incubator with the window directed upwards a little, after which, by strong reflected light, one may readily see the blood circulating through the channels of the vascular area.

PROCEEDINGS OF SCIENTIFIC SOCIETIES.

ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA.—Sept. 20, 1887.—Mr. G. H. Parker gave an historical sketch of investigations upon the eyes of arthropods. Grenacher's theory of the hypodermal origin of the retina, developed by involution, has been borne out by later studies. From a study of the nerve distribution, the speaker believed the three-layered eye to be evolved from that with one layer.

Mr. Meehan stated that in *Mesembryanthemum* and similar plants, the glands of which develop in inverse proportion to the roots, chemical analysis sometimes determines the presence of more nitrogen than can be obtained from the soil. It was suggested that the glands absorbed the gas from the atmosphere.

Mr. H. T. Cresson exhibited specimens of prehistoric implements collected from beds surrounding what had probably been pile dwellings on the mud flats of the Delaware, near Naaman's Creek.

Professor Heilprin described the finding of the remains of a mastodon near Pemberton, N. J.

Oct. 18, 1887.—Dr. H. C. McCook gave an account of an American tarantula which must have been at least seven years old at death, and stated that a queen of the fuscous ant, in the possession of Sir J. Lubbock, died at the age of thirteen years.

Dr. Leidy described a collection of fossil bones from Archer, Fla., and characterized *Hippotherium plicatile*, from teeth and ankle bones, as a species of horse new to science.

Professor Ryder described a ring-like prolongation of the placenta in embryo mice and rats, as indicating the descent of these animals from lower types on which the placenta was zonary.

Oct. 25, 1887.—Professor J. A. Ryder stated his conviction that the organ in the head of fishes, supposed by Wiedersheim to be the homologue of the pineal gland, was really a portion of the lateral line system, and thus derived from the skin.

Mr. Woolman described the deposits pierced by an artesian well, 1,100 feet deep, at Atlantic City. Thirty-one species, including three sharks and a crocodile, were the fossil harvest.

Professor Heilprin stated that *Perna maxillata* found in the above well at a depth of about 800 feet, in dark clay, indicated the base of the miocene, while the *Turritella* found above indicated the middle miocene. The speaker and his class had recently collected several species new to the miocene fauna of New Jersey, including three new to science.

Dr. Kœnig described a new variety of unisilicate of manganese, and proposed for it the name "Bementite."

Dr. Leidy stated his belief, founded on examination of numerous examples, that the brown hydra of North America is identical with that of Europe; and Professor Ryder stated that the marine parasitic infusoria of the American coast were the same as those of Europe.

Dr. Cheston Morris described certain Dorsetshire sheep which seemed to be intermediate between the ordinary sheep and the goat.

Nov. 1, 1887.—Dr. H. C. McCook described the habits of *Formica rufa*, their mounds, their straight roads, etc. *Atta fervens*, a Texan ant, constructs straight underground trails, sometimes for a length of 448 feet.

Dr. Dolley spoke of the native cotton of Harbor Island, one of the Bahamas. It is of a reddish buff tint, and is not attacked by the cotton worm.

Professor Heilprin exhibited the mastodon remains found at Pemberton, N. J.

Nov. 15, 1887.—Professor Ryder described certain improvements in preparing tissues for the microscope. Soaking in celloidin and then in chloroform enabled the most fragile structures to be manipulated.

Nov. 22, 1887.—Dr. H. C. McCook described *Cyrtophora bifurca*, a new orb-weaving spider from Florida.

Dec. 6, 1887.—Mr. Meehan called attention to the prolific growth of interaxial tubers obtained from *Dioscorea eburnea*, a Chinese plant.

Dec. 13, 1887.—Mr. W. H. Dall mentioned the finding of the parasite *Leucochloridium paradoxum* in a Western species of *Succinea*.

Jan. 24, 1888.—Professor W. P. Wilson stated that the apparatus for catching and assimilating insect food is much more efficient in *Sarracenia variolaris* than in *C. purpurea*.

Dr. Horn exhibited a collection of May beetles, comprehending 79 out of the 81 species known north of Mexico.

Professor J. A. Ryder stated that the manner of cleavage of the yolk in the eggs of lampreys and *Batrachia* differs from that which obtains in osseous fishes, birds and reptiles.

BIOLOGICAL SOCIETY OF WASHINGTON, 117th Regular Meeting.—Dec. 17, 1887.—The following communications were presented—Mr. C. L. Hopkins, "Notes Relative to the Sense of Smell in Buzzards;" Dr. Cooper Curtice, "The Timber Line of Pike's Peak;" Mr. Charles D. Walcott, exhibited a section of a fossil *Endoceras* over eight feet in length, with remarks on the same; Dr. Leonhard Stejneger, "On the Extinction of the Great Northern Sea Cow;" Dr. C. Hart Merriam, "Description of a New Mouse from the Great Plains."

118th Regular Meeting.—Dec. 31st, 1887.—The following communications were read:—Mr. W. J. McGee, "The Overlapping Habitats of *Sturnella magna*, and *S. neglecta* in Iowa;" Dr. C. Hart Merriam, "Description of a new Field Mouse from Western Dakota;" Mr. W. B. Barrows, "The Shape of the Bill in Snail-eating Birds;" Mr. H. Justin Roddy, "Feeding Habits of some Young Raptores."